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ABSTRACT

Southern Illinois is well oriented to agricultural resources occupations, including conservation, utilization, and recreation. Interest measuring tests, surveys, and questionnaires were used to: (1) measure interest of sample junior and senior high school students, (2) identify agricultural related businesses and agencies, and (3) identify and assess job titles within the identified businesses and agencies through interviews. Findings revealed that individual instruction on the secondary level is sufficient to meet the needs of students and that student needs at the postsecondary level were insufficient for a 2-year program. Recommendations were that individual students at the secondary level should be offered supervised experience programs in agricultural resources. In addition, a larger feasibility study should be conducted over the entire state of Illinois to measure the interest and occupational opportunities in this area before any junior college institutes such a program. (GB)

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MEASUREMENT OF THE AGRICULTURAL RESOURCES ROLE IN SOUTHERN ILLINOIS AGRICULTURAL EDUCATION.

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MEASUREMENT OF THE AGRICULTURAL RESOURCES ROLE IN SOUTHERN ILLINOIS AGRICULTURAL EDUCATION

The Problems

Since the advent of the Vocational Education Act of 1963, Illinois Vocational Agricultural Education has been experiencing a metamorphosis. No longer is the emphasis on production agriculture instruction adequate. Instead, secondary and post-secondary agricultural programs are expanding to include instruction in agricultural related occupations.

As is characteristic of any transformation, certain problems thwart the successful completion of the change. The problem particularly characteristic of this transformation in agricultural occupations instruction is the lack of pragmatic teaching. This premise indicates that in Southern Illinois, as elsewhere, agricultural occupations instruction must be in harmony with students' interest and employer needs to achieve the most appropriate and beneficial programs. To insure that this harmonious situation will occur, there is need for research to identify students' interests and area needs.

Southern Illinois--defined as the 17 southernmost counties--is especially poorly endowed with those natural land resources

needed for efficient large scale agricultural production, but these same land resources are well oriented to the area outlined by the United States Office of Education (USOE) as Agricultural Resources. The Agricultural Resources area includes occupations in conservation, utilization, and recreation.

Purpose and Objectives of This Study

The purpose of this study was to measure the role of the Agricultural Resources area with respect to Southern Illinois Agricultural Education at the secondary and two-year levels. To achieve this purpose, the following three objectives were defined.

1. Measure the interest of junior and senior high school students in the Agricultural Resources area.
2. Identify agricultural related businesses and agencies associated with the Agricultural Resources area.
3. Identify and assess the Agricultural Resources job titles within the identified businesses and agencies.

Methodology Used

To meet the specific objectives of this study a three step methodology was used. This methodology was as follows:

1. Cluster sample students in Agricultural Occupations programs with an interest measuring test designed to identify significant interest and significant disinterest in Agricultural Resources.
2. Survey agricultural related businesses and agencies to identify those associated with Agricultural Resources.

3. Interview identified businesses and agencies with questionnaires to identify and assess the Agricultural Resources job titles.

Results of Interest Measuring Test

The distribution of the Agricultural Resources interest scores in the sample closely approximated a normal bell shaped curve. Actual results illustrated that 51 students were significantly interested, 51 students were significantly disinterested, and 124 students were neither. Significantly interested students were those who selected 16 or more of the 24 possible choices in the area of agricultural resources on the occupational interest inventory. Further analysis showed that these 51 interested students were spread throughout the sampled schools and not concentrated in a few schools. (See Table 1)

The analysis used to prove that significantly interested students in Agricultural Resources were spread throughout the sample was that of intraclass correlation. The intraclass correlation coefficient calculated was a -.0534. This low negative value indicates that if one were to observe a student who was significantly interested in Agricultural Resources in a given school, one would be more likely to find another student (chosen at random) who was significantly interested in Agricultural Resources if one were to choose the latter student from a school other than the one attended by the first student. The result of the test not only offered information concerning the distribution of Agricultural Resources interest, but also provided information for estimation.

TABLE 1

NUMBER OF SIGNIFICANTLY INTERESTED STUDENTS IN AGRICULTURAL RESOURCES BY SCHOOLS

School	Number of Students
West Frankfort Community Unit	2
Benton Consolidated	6
Ridgway North Gallatin Community Unit	2
Shawneetown Southeast Gallatin Community Unit	1
Gorham Mississippi Valley Community Unit	6
Campbell Hill Trico Community Unit	3
Goreville Township	7
Metropolis Community Unit	5
Joppa Community Unit	3
Ullin Community Unit	4
Red Bud Community Unit	7
Sparta Community Unit	2
Eldorado Township	3
Norric City Norris City - Omaha Community Unit	0
TOTAL	51

The estimate of total significant interest in the Agricultural Resources area in Southern Illinois was approximately 166 students with a .997 confidence interval of plus or minus 13 students. With this estimate as to the total significant interest in Agricultural Resources in Southern Illinois, a process of reducing this number was used to obtain the number of students who might be expected to attend a two year post-secondary program in Agricultural Resources. This was done by first using the most conservative estimate, dividing it by two to obtain the number graduating per year and then further discounting this number by three factors. These factors were (1) the number who may continue their education, (2) the number who may remain in Agricultural Resources, and (3) the number who might be expected to attend a two year program rather than a four year program. This final estimate as to the number of students in Southern Illinois who were significantly interested in Agricultural Resources in Southern Illinois was reduced to only eight students.

Results of Business and Agency Survey

The business and agency survey illustrated that three basic types of groups were in Southern Illinois and related to Agricultural Resources. These were governmental agencies, private businesses and quasi-public agencies.

The governmental group was well represented by various agencies on all three levels: national, state, and local. The

agencies of government were predominately associated with parks and conservation. This was expected because of the public responsibility in these areas.

The private sector was composed almost entirely of small owner operator recreational farms and camping sites. No information was available, however, as to the number of these businesses that were less than five years old, which would have enabled a statement of growth.

The last group was the quasi-public agencies. This was essentially camps and organizations. The camps numbered 11 and reaffirms the contention that Southern Illinois has an abundance of natural scenic areas. The organizations were mainly those associated with planning, developing, tourism, or recreational. These numbered 12 and further indicate an interest in Agricultural Resources in Southern Illinois.

Results of Job Title Identification

The results of the job title identification can be summed up with essentially four observations. First it was observed that many of the Agricultural Resources businesses and agencies either do not employ workers or the workers that were employed fell into job title classifications other than Agricultural Resources. These businesses and agencies included the private business sector, quasi-public associations, and many of the local governmental groups.

Second, it was found that the remaining large employers of agricultural resources job titles were at the national and

state levels. Smaller employers--municipal parks and quasi-public camps--relied on one full time employee and many part time employees during the height of the season.

Third, it was found that of the estimated jobs in Southern Illinois in the Agricultural Resources area, part time jobs outnumbered full time jobs at a ratio of 3:2. This points to the seasonality of Agricultural Resources job titles.

Fourth, using only businesses and agencies interviewed in this study three pertinent observations in relation to the full time employment structure in the Agricultural Resources area were made.

1. Approximately 19 per cent of the Agricultural Resources jobs required a bachelors degree.
2. Approximately 41 per cent of the identified jobs possessed political requirements for job entry.
3. There was a reliance on youth groups to accomplish much of the seasonal maintenance work.

Results of Job Title Assessment

The job titles identified were clustered into four main types of work: (1) managerial, (2) supervisory, (3) technical, and (4) skilled and semi-skilled. The entry age in all clusters was approximately 21 years of age. This varied up and down three to four years depending on the responsibility associated with the job. Monetary rewards were both hourly and salaried and ranged according to the job title as expected. The predominant area of knowledge and ability required in the identified job titles was

agricultural mechanization. Practically all job titles required a high school certificate for entry except the skilled and semi-skilled fields. Only the Soil Conservation Service engaged in an extensive structured training program. Job improvement possibilities included both grade and/or higher job titles but experience was observed as the main improvement condition rather than further education. Expected increased jobs requiring a high school certificate were observed to number only 17 over the next five years. Generally no great difficulty was observed in the ability of the interviewed agencies in finding qualified personnel.

Conclusions

The following conclusions are offered regarding the objectives of this study.

1. The irregular distribution of significant interest in Agricultural Resources in Southern Illinois would necessitate individual instruction on secondary level Agricultural Occupation programs.
2. The estimated number of discounted students significantly interested in Agricultural Resources from Southern Illinois who may be expected to enter a two-year post-secondary program in Agricultural Resources was insufficient to warrant a two-year post-secondary Agricultural Resources program in and for Southern Illinois only.

3. The number and type of Agricultural Resources businesses and agencies in Southern Illinois will expand and increase the number of jobs in the future.
4. The present agricultural resources related businesses and agencies in Southern Illinois are an insufficient employment base to warrant a two-year post-secondary program in Agricultural Resources in and for Southern Illinois only.

Program Recommendations

With reference to the purpose of this study four recommendations are offered as follows:

1. Agricultural Occupations instructors should attempt to identify students who are interested in the Agricultural Resources area.
2. Supervised Agricultural Experience Programs in Agricultural Resource Occupations should be offered at the secondary level for those students who are significantly interested in Agricultural Resources.
3. Team curricula in Agricultural Resources and Agricultural Mechanization should be taught to provide the necessary skills and abilities for job entry.
4. A larger feasibility study should be conducted over the entire state of Illinois to measure the interest and occupational opportunities in Agricultural Resources before any junior college institutes such a program.

Proposals for Further Research

1. Initiate other post-secondary feasibility studies for Southern Illinois. The test results have indicated approximations as to the number of significantly interested students in the seven USOE agricultural codes in Southern Illinois. Only the job titles in Agricultural Resources were identified and assessed in this study, and then matched with the amount of observed interest. This process of identifying and assessing the job titles in the six other USOE agricultural codes and then matching them with the approximate number interested should be done. These feasibility studies would serve as guide lines for the location of post-secondary training programs in Southern Illinois.

2. Initiate an agricultural occupations coding study. The methodology section of this study indicated large disparities in the manner in which previous studies in other states have coded various job titles. The same job title is often included in two different USOE agricultural codes. An agricultural occupation coding study that uses a criteria of job factor analysis or similar criteria may provide a more homogeneous coding system than is now used. With a monogeneous code system in agricultural occupations, improved programs and curricula can be developed.

3. Initiate an interest measuring test study. The interest measuring instrument utilized in this study was limited by time, cost, and sampling area. With these limitations it

successfully indicated that (1) age influences decision making, (2) area reflects interest, and (3) previous instruction influences interests. The refinement of this interest measuring instrument paralleled with a larger sampling area and more categorizing information would add to knowledge of what shapes or stimulates a student's interest. This type of information could then be utilized to improve the training and instruction offered to the student.

APPENDIX

AGRICULTURAL OCCUPATIONS INTEREST INVENTORY

INSTRUCTIONS:

The following pages contain a number of jobs or occupations that have been paired according to similarities. Some of the jobs will not interest you and others you may not be acquainted with, but in either case choose the occupation that you prefer. Your choices may be based on a definite preference or your selection may simply be based on what you think you would like best.

Mark your choices on the separate answer sheet; do not mark on this test booklet. Remember, mark one and only one job in each of the pairs, and make a decision on each of the pairs.

EXAMPLES:

	A	B			
1.	machine operator	- or - pony ride operator	1.	A	<u>B</u>
2.	farm foreman	- or - poultry foreman	2.	<u>A</u>	B

Put your name, class, date, and school at the top of the answer sheet.

BEGIN

1. weed inspector -or- shipping inspector
2. cotton grower -or- vegetable grower
3. livestock caretaker -or- farm caretaker
4. log picker -or- moss picker
5. grinder operator -or- decay control operator
6. seed cutter -or- cord wood cutter
7. assembly inspector helper -or- airplane pilot helper
8. sanitary inspector -or- carrot grader-inspector
9. mushroom grower -or- flower grower
10. feed mill operator -or- decay control operator
11. post cutter -or- seed cutter
12. harness maker -or- butter maker
13. flowers salesperson -or- general hardware salesperson
14. machine cranberry picker -or- worm picker
15. recreation superintendent -or- superintendent of greens
16. incubator foreman -or- assembly foreman
17. fruit packing grader operator -or- power shovel operator
18. woods boss -or- thinning row boss
19. feed blender -or- cheese blender
20. greens picker -or- seed cone picker
21. machine cranberry picker -or- log picker
22. park superintendent -or- production superintendent
23. farm foreman -or- egg room foreman
24. grain mixer -or- feed mixer
25. woods boss -or- barn boss

26. poultry equipment & supplies salesman -or- tractor & farm implement salesman
27. decay control operator -or- grinder operator
28. equipment test technician -or- poultry technician
29. park worker -or- nursery worker
30. field hauler -or- peanut hauler
31. cheese maker -or- harness maker
32. log picker -or- worm picker
33. food products salesman -or- machinery salesman
34. superintendent of greens -or- park superintendent
35. major assembly inspector -or- veterinary virus-serum inspector
36. park worker -or- general farm worker
37. superintendent of production -or- park superintendent
38. processing foreman -or- blight control foreman
39. seed cone picker -or- contract picker
40. veterinary virus-serum inspector -or- sanitary inspector
41. superintendent of greens -or- superintendent of production
42. major assembly inspector -or- weed inspector
43. park caretaker -or- animal caretaker
44. crew boss -or- woods boss
45. packing house foreman -or- spray foreman
46. logging foreman -or- livestock sales barn foreman
47. parts salesperson -or- flowers salesperson
48. nursery worker -or- germination worker
49. egg washing machine operator -or- decay control operator
50. park foreman -or- blight control foreman

51. farm caretaker -or- park caretaker
52. veterinary meat inspector -or- sanitary inspector
53. blight control foreman -or- assembly foreman
54. moss cutter -or- cedar post cutter
55. nursery laborer -or- hatchery laborer
56. seed corn laborer -or- landscape laborer
57. pilot (conservation officer) -or- pilot (sprayer)
58. farm caretaker -or- livestock caretaker
59. fleese tier -or- cotton tier
60. logging instructor -or- fishing instructor
61. moss cutter -or- post cutter
62. landscape laborer -or- seed corn laborer
63. garage foreman -or- logging foreman
64. park foreman -or- maintenance foreman
65. contract picker -or- seed cone picker
66. worm picker -or- log picker
67. forest engineer -or- dairy plant engineer
68. general superintendent of milling -or- recreation superintendent
69. greens picker -or- machine cranberry picker
70. assembly inspector -or- weed inspector
71. weed inspector -or- veterinary virus-serum inspector
72. superintendent of production -or- general superintendent of milling
73. superintendent of coop packing association -or- park superintendent
74. logging foreman -or- park foreman
75. moss picker -or- contract picker

76. decay control operator -or- fruit packing grader operator

77. maintenance foreman -or- fruit farm foreman

78. fishing instructor -or- logging instructor

79. farm equipment operator -or grinder operator

80. superintendent of coop packing association -or- superintendent of greens

81. Christmas tree cutter -or- moss cutter

82. grinder operator -or- milking machine operator

83. greens caretaker -or- camp ground caretaker

84. seed corn laborer -or- ranch laborer

School_____ Name_____

Class_____ Date_____

ANSWER SHEET

1.	A	B	22.	A	B	43.	A	B	64.	A	B
2.	A	B	23.	A	B	44.	A	B	65.	A	B
3.	A	B	24.	A	B	45.	A	B	66.	A	B
4.	A	B	25.	A	B	46.	A	B	67.	A	B
5.	A	B	26.	A	B	47.	A	B	68.	A	B
6.	A	B	27.	A	B	48.	A	B	69.	A	B
7.	A	B	28.	A	B	49.	A	B	70.	A	B
8.	A	B	29.	A	B	50.	A	B	71.	A	B
9.	A	B	30.	A	B	51.	A	B	72.	A	B
10.	A	B	31.	A	B	52.	A	B	73.	A	B
11.	A	B	32.	A	B	53.	A	B	74.	A	B
12.	A	B	33.	A	B	54.	A	B	75.	A	B
13.	A	B	34.	A	B	55.	A	B	76.	A	B
14.	A	B	35.	A	B	56.	A	B	77.	A	B
15.	A	B	36.	A	B	57.	A	B	78.	A	B
16.	A	B	37.	A	B	58.	A	B	79.	A	B
17.	A	B	38.	A	B	59.	A	B	80.	A	B
18.	A	B	39.	A	B	60.	A	B	81.	A	B
19.	A	B	40.	A	B	61.	A	B	82.	A	B
20.	A	B	41.	A	B	62.	A	B	83.	A	B
21.	A	B	42.	A	B	63.	A	B	84.	A	B

AGRICULTURAL RESOURCE OCCUPATIONS SURVEY

Agency or business_____ Date_____

Address_____ Phone No._____

Person Interviewed_____ Title_____

Complete the following according to Job Titles or area of work for all your employees in this agency or business.

	Job Title or Short Description of Job	#M	#F
1.		____	____
2.		____	____
3.		____	____
4.		____	____
5.		____	____
6.		____	____
7.		____	____
8.		____	____
9.		____	____
10.		____	____
11.		____	____
12.		____	____
13.		____	____
14.		____	____
15.		____	____

Assuming the current rate of expansion in this agency of business, please approximate the total number of employees that will be employed five years from now.

Part Time_____ Full Time_____

JOB TITLE DESCRIPTION

Job Title or Description_____

Number of Employees:

Currently	5 Years Ago	5 Years From Now
Part Time_____	Part Time_____	Part Time_____
Full Time_____	Full Time_____	Full Time_____

Employment Status (check one):

Professional_____ Managerial_____ Supervisory_____ Technical_____

Clerical_____ Sales_____ Service_____ Skilled_____ Unskilled_____

Semi-Skilled_____

Educational Level Required For:	Entry	Advancement
Less than Elementary	____	____
Elementary Certificate	____	____
High School Certificate	____	____
Post-Secondary Training	____	____
Technical Training	____	____
Bachelor's Degree	____	____

Age Consideration:

Average Age_____

Minimum Age_____

Maximum Age_____

Wage Consideration/Mo.

Salaried____ Hourly____

$ 0-100____ $100-200__

$200-400____ $400-600__

$600-plus___

Does a Structured on the Job Training Program Exist for this Job Title:

Yes____ No____ Number of Weeks____ Number of Hours/Week____

Please Rate the Importance of These Areas for This Job Title:

Animal Science____ Plant Science____ Ag Business (Mktg & Mgt)____

Ag Mechanization____ Length of Time Employee Usually in this Job Title____

Reason for Outmigration from this Job Title:

Unknown____ Higher Job Title____ Higher Wages____ Seasonal____

Other (please explain)_____

If Higher Job Title, What Job Title_____

Difficulty in Finding Qualified Personnel in this Job Title:

No Difficulty_____ Some Difficulty____ Extreme Difficulty____

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